

New Claims

1. Method for composition of subtitles for audio/video presentations, wherein data streams containing video, audio and subtitle information are transferred from a storage medium, such as a disc, **characterized in**
  - retrieving from said storage medium subtitle layer data, the subtitle layer data containing graphic subtitle elements;
  - extracting from said retrieved subtitle layer data cropping information (RHC,RVC,RCH, RCW); and
  - enabling automatic cropping of parts of the subtitle elements to be displayed, wherein the cropped parts are defined by said cropping information.
2. Method according to claim 1, wherein the cropped parts of the subtitle elements are synchronized to the audio/video presentation through presentation time stamps.
3. Method according to claim 1 or 2, wherein the subtitle layer data comprise data for a first color look-up table to be used within a sub-region of said cropped parts of the subtitles, the sub-region being specified by parameters (SCHA,SCVA,SCH,SCW) included in said subtitle layer data, and further comprise data for a different second color look-up table to be used in the remainder of the subtitle layer.
4. Method according to any of the previous claims, wherein a user may interactively move, crop or highlight subtitles or modify the colors of subtitles.
5. Apparatus for composition of subtitles for audio/video



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- means for retrieving from said storage medium subtitle layer data, wherein the subtitle layer data contain graphic subtitle elements;
  - means for extracting from said retrieved subtitle layer data cropping information (RHC,RVC,RCH, RCW); and
  - means for enabling automatic cropping of parts of the subtitle elements to be displayed, wherein the cropped parts are defined by said cropping information.
6. Apparatus according to the previous claim, further comprising means for synchronizing the cropped parts of the subtitles to the audio/video presentation through presentation time stamps.
7. Apparatus for composition of subtitles, the apparatus mixing and switching video and graphics data, the data being read from a storage medium or received from a network and comprising still picture data or MPEG video data, data for at least two layers of subtitles or animations, and optionally data for non-synchronized graphics, the apparatus comprising
- a mixer (MX) that may superimpose video data of a back layer, at least two middle layers and a front layer;
  - a mixer and scaler (MXS) that may superimpose video data of a back layer, a middle layer and a front layer, the mixer and scaler (MXS) providing its output data to the mixer (MX);
  - a video decoder (MVDec) and/or a still picture decoder (SPDec), wherein the output data of either the video decoder or the still picture decoder may be switched



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- (s1) to the mixer and scaler (MXS);
- at least two simultaneously working decoders (AVSGDec1, AVSGDec2) for synchronized graphics or subtitles, wherein the output of each of the decoders may be switched (s2, s3) to either the mixer (MX) or the mixer and scaler (MXS), and wherein a decoder (AVSGDec1, AVSGDec2) may select a part (RHC, RVC, RCH, RCW) of its input data to be output for display;
  - a renderer for the non-synchronized graphics, providing data to the mixer (MX).
8. Apparatus according to any of the claims 5-7, further comprising a subtitle decoder (ST-DEC) that is capable of superseding default subtitle parameters (DD) with other subtitle parameters (SD) generated upon user action, for interactively modifying or highlighting subtitles.
9. Optical storage medium containing data for audio/video presentation and data for composition of subtitles for said audio/video presentation, wherein the data for composition of subtitles contain
- data representing graphic subtitle elements to be rendered in a subtitle layer; and
  - cropping information (RHC, RVC, RCH, RCW) defining parts of the graphic subtitle elements to be automatically cropped before displaying the subtitles.